River Bend 1
4Q/2003 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2003
Identified By: Self Disclosing
Item Type: FIN Finding
Normal Service Water pump found to be air-bound when called upon to run
A self-revealing finding was identified and determined to be of very low safety significance. A human performance error caused the isolation of the air release valve for normal service water Pump C. The air release valve for a normal service water pump served as a high point vent on the system while the pump was secured. As a result, normal service water Pump C became air bound while in standby, and failed to develop discharge pressure when started during a manual swap of running normal service water pumps on September 1, 2003. The inspectors determined that the finding did not represent a noncompliance because it occurred on non-safety-related normal service water system.

The inspectors determined that the failure to maintain normal service water Pump C discharge air release valve isolation valve open was more than minor because it was associated with an increase in the likelihood of an initiating event. The finding was of very low safety significance because there was only a small increase in the likelihood of a loss of normal service water with one of the three 50 percent capacity normal service water pumps unavailable and because the standby service water system was available throughout the time normal service Pump C was air bound.
Inspection Report# : 2003006*(pdf)*

Significance: G Dec 31, 2003
Identified By: Self Disclosing
Item Type: FIN Finding
Repeat failure of main turbine control system hydraulic lines leads to manual reactor scram and turbine trip
A self-revealing finding was identified for failure to properly diagnose a failure of turbine control hydraulic line failure in August 2000. As a result, a similar line failed on February 22, 2003, causing the operators to scram the reactor and trip the main turbine. The inspectors determined that the finding did not represent a noncompliance because it occurred on non-safety-related secondary plant equipment.

The inspectors determined that this problem identification and resolution finding is more than minor because the misdiagnosis of the August 31, 2000 failure contributed to the February 22, 2003, failure. The finding affected the initiating events cornerstone and was considered to have very low safety significance because it did not contribute to the likelihood of a LOCA, nor the likelihood of both a reactor scram and mitigating equipment or functions being unavailable, and because there was no increased likelihood of a fire or internal/external flood.
Inspection Report# : 2003006*(pdf)*

Mitigating Systems

Significance: G Jun 17, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
HPCS Inadvertently Disabled Due to Personnel Error During Installation of Clearance Order
The inspectors identified a self-revealing violation for failure to comply with Technical Specification 5.4.1.a. Operators mistakenly racked out the HPCS pump breaker when implementing a clearance order on a standby service water.

This self-revealing finding was more than minor because the HPCS safety function was made unavailable. The inspectors reviewed the finding using Inspection Manual Chapter 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The inspectors determined that the finding was of very low safety significance (Green) because the HPCS pump was not functional for less than one hour. Recovery credit was given for operator actions necessary to restore the equipment lineup and recover the safety function.
Inspection Report# : 2003005*(pdf)*

Significance: G Jun 10, 2003
Identified By: Self Disclosing
Item Type: FIN Finding
Foreign material caused failure of one residual heat removal equipment room floor drain sump pump while the other pump was unavailable
The inspectors identified a self-revealing finding for failure to control foreign material in the residual heat removal Train B equipment room which resulted in the failure of one of two floor drain pumps while the other floor drain pump was unavailable. The finding was of very low safety significance because the floor drain sump pump failure did not cause an actual loss of safety function for residual heat removal Train B.

The inspectors determined that the licensee's failure to control foreign material in the residual heat removal Train B equipment room, which resulted in the fouling and unavailability of floor drain Pump DFR-P3L while Pump DFR-P3E was also unavailable, was a performance deficiency. This self-revealing finding was more than minor because, if left uncorrected and a leak developed in the residual heat removal Train B equipment room, the unavailability of both floor drain sump pumps could lead to a loss of residual heat removal Train B. The inspectors reviewed the finding using Inspection Manual Chapter 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." Based on the results of the phase one screening of the finding, the inspectors determined that the finding was of very low safety significance because the floor drain sump pump failure did not increase the likelihood of a plant trip or degrade more than one train of any safety system. The finding is documented in the licensee's corrective action program as CR-RBS-2003-2368.
Inspection Report# : 2003004*(pdf)*

Significance: G May 07, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Automatic Initiation of Standby Service Water System Due to Inadequate Control of System Operation
The inspectors identified a self-revealing violation of Technical Specification 5.4.1 because operators lined up service water to the reactor plant and turbine plant cooling water systems such that an automatic start of standby service water occurred on low system pressure while shifting normal service water pumps. Three heat exchangers in each system were in service when the system operating procedures for reactor plant and turbine plant cooling water allow only two heat exchangers in operation per system.

This finding is greater than minor because it was associated with the ability to meet the mitigating systems cornerstone

objective and because a plant transient occurred. The inspectors determined that the finding was of very low safety significance (Green), since the finding did not represent an actual loss of safety function of a single train.
Inspection Report# : 2003005*(pdf)*

Significance: G Feb 21, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to maintain watertight integrity of severe weather doors compromised the availability of standby service water system
The inspectors identified a noncited violation for the failure of the licensee to comply with 10 CFR Part 50, Appendix B, Criterion III, "Design Control." This violation was for failure to incorporate necessary measures into station procedures to ensure that the design basis of the doors at the end of underground G-Tunnel was maintained.

The finding was more than minor because it was associated with flood protection measures and degraded the ability to meet the mitigating systems cornerstone objective. It had an adverse impact on the flooding potential of the G-Tunnel, which opened into the base of the standby cooling tower, and challenged the availability of the standby service water system. The finding is of very low safety significance because of the existing condition of the door seals, the availability of two nonsafety-related sump pumps at the base of the standby cooling tower, the relative height of the control circuits and motor operators of the cooling tower inlet valves and the possibility of operator action to manually initiate standby service water before the failure of the standby cooling tower inlet valves. The finding was documented in the licensee's corrective action program as CR-RBS-2003-1894.
Inspection Report# : 2003004*(pdf)*

Significance: W Nov 14, 2002
Identified By: Self Disclosing
Item Type: VIO Violation
Failure to properly lock open condensate valve resulted in loss of feedwater flow following reactor scram
As documented in special inspection report 05000458/2002007, the inspectors identified a violation of Technical Specifications 5.4.1.a. for failure to properly lock open condensate prefilter vessel bypass flow control Valve CNM-FCV200. As a result, when the reactor automatically scrammed the valve closed and feedwater flow was lost to the reactor. The operators were able to provide makeup water to the reactor using the reactor core isolation cooling system.

The final significance determination was completed and documented in "Final Significance Determination for a White Finding and Notice of Violation," (EA-03-077) dated December 29, 2003. The finding was determined to be of low to moderate safety significance because of the combination of risk associated with a loss of feedwater and from external events, such as a fire in conjunction with a loss of the feedwater system, over a period of approximately 126 days.
Inspection Report# : 2003006*(pdf)*

Barrier Integrity

Significance: G Nov 07, 2003
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to Identify Failed Open Secondary Containment Doors as Condition Adverse to Quality
The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, for failure to identify conditions that would have caused unexpected entry into Technical Specification Action Statements and had the potential to cause secondary containment to be inoperable.

The issue was more than minor because it affects the reactor safety/barrier integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide release caused by accidents or events. The results of the phase one evaluation of the significance determination process was that the issue was of very low safety significance because the finding only represents a degradation of the radiological barrier function provided by the auxiliary building and the duration of each of the 9 incidents was less than 10 minutes.
Inspection Report# : 2003007*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Significance: G Aug 22, 2003
Identified By: NRC
Item Type: FIN Finding
Failure to maintain collective doses associated with RWP 2003-1800 ALARA
The inspector identified an ALARA finding because performance deficiencies resulted in a collective dose of the work activity that exceeded 5 person-rem and exceeded the legitimate dose estimation by more than 50 percent. Specifically, Radiation Work Permit 2003-1800, "RF-11 Refueling Activities," accrued 34.962 person-rem and exceeded the dose estimate (19.939 person-rem) by 75 percent. A primary cause for the unplanned dose was the licensee's failure to effectively schedule the use of the Alternate Heat Decay Removal System, a system which had previously proven to be effective at removing radioactivity from the refueling pool. The licensee also failed to limit the number of personnel on the refueling bridge to the planned number, thus causing the work activity to accrue more collective dose than estimated. A contamination incident during the disassembly of the reactor vessel was caused by poor planning and required additional time for cleanup.

This finding was more than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute (ALARA planning/estimated dose) and affected the associated cornerstone objective (to ensure adequate protection of worker health and safety from exposure to radiation). The finding involved a failure to maintain or implement, to the extent practical, procedures or engineering controls needed to achieve occupational doses that were ALARA, and that resulted in unplanned, unintended occupational collective dose for a work activity. When processed through the Occupational Radiation Safety Significance Determination Process, this ALARA finding was found to have no more than very low safety significance because the licensee's 3-year rolling average collective dose was not greater than 240 person-rem.
Inspection Report# : 2003005*(pdf)*

Significance: G Aug 22, 2003
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to post a radiological hazard
The team identified a non-cited violation of Technical Specification 5.4.1a because the licensee failed to post a radiological hazard (hot spot). Station Procedure RP-109, "Hot Spot Program," Revision 0, Step 5.2.1, required that hot spots are identified with a hot spot tag to alert workers of the hazard. However, on August 19, 2003, the team identified a hot spot on an accessible drain line from the radwaste sample sink reading 200 millirem per hour on contact and 50 millirem per hour at one foot from the source. The licensee performed a survey 11 days earlier that identified the radiation levels, however, the technician and the survey reviewer failed to tag the hot spot to warn workers of the hazard.

The finding was more than minor because it was associated with the Occupational Radiation Safety cornerstone attribute (Program and Process) and affected the associated cornerstone objective. The finding involved the potential for a workers unplanned or unintended dose resulting from actions contrary to procedures. When processed through the Occupational Radiation Safety Significance Determination Process the team determined that the finding had very low safety significance because the finding did not involve as low as is reasonably achievable (ALARA) planning or work controls, no individual received an overexposure or a substantial potential for overexposure, and the ability to assess dose was not compromised.
Inspection Report# : 2003009*(pdf)*

Significance: G Apr 09, 2003
Identified By: NRC
Item Type: FIN Finding
Failure to maintain collective doses ALARA that were associated with RWP 2003-1929
A finding was identified because the licensee failed to maintain collective doses ALARA. Specifically, the work activity collective dose associated with RWP 2003-1929 Task 1, "Refueling Outage 11 Recirculation Pump Work," exceeded 5 person-rem and exceeded the dose estimation by more than 50 percent.

The failure to maintain collective doses ALARA is a performance deficiency. This finding was more than minor because it is associated with the Occupational Radiation Safety Cornerstone attribute (ALARA planning/projected dose) and affected the associated cornerstone objective (to ensure adequate protection of worker health and safety from exposure to radiation). This occurrence involved worker inefficiencies, inadequate planning, scheduling and supervisory oversight which resulted in unplanned, unintended occupational collective dose for a work activity. When processed through the Occupational Radiation Safety Significance Determination Process, this finding was found to have no more than very low safety significance because the finding was an ALARA Planning issue, the licensee's three-year rolling average collective dose was greater than 240 person-rem, the actual dose for the work activity was not more than 25 person-rem, and there were no more than four occurrences.
Inspection Report# : 2003003*(pdf)*

Significance: G Apr 09, 2003
Identified By: NRC
Item Type: FIN Finding
Failure to maintain collective doses ALARA that were associated with RWP 2003-1935
A finding was identified because the licensee failed to maintain collective doses ALARA. Specifically, the work activity collective dose associated with RWP 2003-1935, "Drywell Valve Maintenance, to include Repacks and Support Work," exceeded 5 person-rem and exceeded the dose estimation by more than 50 percent.

The failure to maintain collective doses ALARA is a performance deficiency. This finding was more than minor because it is associated with the Occupational Radiation Safety Cornerstone attribute (ALARA planning/projected dose) and affected the associated cornerstone objective (to ensure adequate protection of worker health and safety from

exposure to radiation). This occurrence involved worker inefficiencies and inadequate planning which resulted in unplanned, unintended occupational collective dose for a work activity. When processed through the Occupational Radiation Safety Significance Determination Process, this finding was found to have no more than very low safety significance because the finding was an ALARA Planning issue, the licensee's three-year rolling average collective dose was greater than 240 person-rem, the actual dose for the work activity was not more than 25 person-rem, and there were no more than four occurrences.
Inspection Report# : 2003003*(pdf)*

Significance: G Apr 09, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to develop a sufficiently detailed work plan
The licensee failed to develop a sufficiently detailed work plan for the decontamination of the reactor vessel bellows, in violation of Technical Specification 5.4.1. a. The work plan failed to provide guidance on maintaining highly contaminated surfaces (the reactor vessel bellows surface) wet, using a hydrolaser with a rotary surface cleaner, or briefing the individual using the hydrolaser. The lack of a detailed work planned contributed to an unexpected increase in airborne radioactivity and unplanned personnel exposures.

This self-revealing, noncited violation was greater than minor because it was associated with one of the Occupational Radiation Safety Cornerstone attributes (exposure/contamination control) and the finding affected the associated cornerstone objective (to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material). The inspector processed the violation through the Occupational Radiation Protection Significance Determination Process because the occurrence involved potential doses (resulting from actions or conditions contrary to licensee procedures) which could have been significantly greater as a result of a single minor, reasonable alteration of the circumstances. However, because the violation was not an as low as is reasonably achievable (ALARA) finding, there was no personnel overexposure, there was no substantial potential for personnel overexposure, and the finding did not compromise the licensee's ability to assess dose, the violation had no more than very low safety significance.
Inspection Report# : 2003003*(pdf)*

Significance: G Apr 09, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to survey
The licensee failed, in three examples, to survey or evaluate radiological hazards when conducting reactor vessel bellows decontamination, in violation of 10 CFR 20.1501(a). First, the licensee failed to evaluate the highest concentration of radioactive contamination on the reactor vessel bellows. Additionally, the licensee failed to evaluate the airborne radioactivity in the immediate vicinity of reactor vessel bellows contamination. Later, the licensee failed to evaluate the airborne radioactivity levels throughout the containment building when continuous air monitors alarmed.

This self-revealing, noncited violation was greater than minor because it was associated with one of the Occupational Radiation Safety Cornerstone attributes (exposure/contamination control) and the finding affected the associated cornerstone objective (to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material). The inspector processed the violation through the Occupational Radiation Protection Significance Determination Process because the occurrence involved potential doses (resulting from actions or conditions contrary to licensee procedures) which could have been significantly greater as a result of a single minor, reasonable alteration of the circumstances. However, because the violation was not an ALARA finding, there was no personnel overexposure, there was no substantial potential for personnel overexposure, and the finding did not

compromise the licensee's ability to assess dose, the violation had no more than very low safety significance.
Inspection Report# : 2003003*(pdf)*

Significance: G Apr 09, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to post an airborne radioactivity area
The licensee failed to post the reactor containment building as an airborne radioactivity area, in violation with 10 CFR 20.1902(d). Airborne radioactivity levels exceeded the allowable limits in 10 CFR Part 20, Appendix B by as much as 3.5 times. The condition existed for at least five hours.

This self-revealing, noncited violation was greater than minor because it was associated with one of the Occupational Radiation Safety Cornerstone attributes (exposure/contamination control) and the finding affected the associated cornerstone objective (to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material). The inspector processed the violation through the Occupational Radiation Protection Significance Determination Process because the occurrence involved potential doses (resulting from actions or conditions contrary to licensee procedures) which could have been significantly greater as a result of a single minor, reasonable alteration of the circumstances. However, because the violation was not an ALARA finding, there was no personnel overexposure, there was no substantial potential for personnel overexposure, and the finding did not compromise the licensee's ability to assess dose, the violation had no more than very low safety significance.
Inspection Report# : 2003003*(pdf)*

Significance: G Apr 09, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to instruct workers
Following an occurrence that caused an airborne radioactivity area, the licensee failed to inform workers of radiological conditions that had changed and of precautions to minimize exposure, in violation of 10 CFR 19.12.

This self-revealing, noncited violation was greater than minor because it was associated with one of the Occupational Radiation Safety Cornerstone attributes (exposure/contamination control) and the finding affected the associated cornerstone objective (to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material). The inspector processed the violation through the Occupational Radiation Protection Significance Determination Process because the occurrence involved potential doses (resulting from actions or conditions contrary to licensee procedures) which could have been significantly greater as a result of a single minor, reasonable alteration of the circumstances. However, because the violation was not an ALARA finding, there was no personnel overexposure, there was no substantial potential for personnel overexposure, and the finding did not compromise the licensee's ability to assess dose, the violation had no more than very low safety significance.
Inspection Report# : 2003003*(pdf)*

Significance: G Apr 09, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to control a locked high radiation area
The licensee failed to control an area with dose rates of 1000 millirems per hour as a locked high radiation area, in violation of Technical Specification 5.7.2. After a plant scram on September 18, 2002, a worker entered the reactor core isolation cooling area on the 95-foot elevation of the auxiliary building and received an electronic dosimeter dose

rate alarm. A crud burst resulting from a transient that occurred approximately three hours previously caused the dose levels in the area entered by the worker to increase to 1000 millirems per hour. Historically, the site has experienced crud bursts under similar conditions and the increase in dose rate should have been anticipated and evaluated.

This self-revealing, noncited violation was greater than minor because it was associated with one of the Occupational Radiation Safety Cornerstone attributes (exposure/contamination control) and the finding affected the associated cornerstone objective (to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material). The inspector processed the violation through the Occupational Radiation Protection Significance Determination Process because the occurrence involved potential doses (resulting from actions or conditions contrary to licensee procedures) which could have been significantly greater as a result of a single minor, reasonable alteration of the circumstances. However, because the violation was not an ALARA finding, there was no personnel overexposure, there was no substantial potential for personnel overexposure, and the finding did not compromise the licensee's ability to assess dose, the violation had no more than very low safety significance.
Inspection Report# : 2003003*(pdf)*

Public Radiation Safety

Significance: G Aug 22, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to properly control radioactive material
A self-revealing non-cited violation of Technical Specification 5.4.1a was reviewed by the team because the licensee did not prevent the release of detectable licensed radioactive material from the controlled access area. Specifically, Section 5.1.1 of Procedure RSP-213, "Control and Handling of Radioactive Materials," Revision 16, stated, in part, that material can be unconditionally released from the controlled access area if there is no detectable loose surface and fixed contamination above background radiation levels. However, on March 31, 2003, the licensee failed to evaluate an item, against their procedural criteria, prior to it being unconditionally released from the controlled access area and subsequently released from the protected area. Fixed contamination levels were as high as 1,000 corrected counts per minute per probe area.

The finding was more than minor because it was associated with the Public Radiation Safety cornerstone attribute (Program and Process) and affected the associated cornerstone objective. The finding involved an occurrence in the radioactive material control program that was contrary to licensee procedures. When processed through the Public Radiation Safety Significance Determination Process, the team determined the finding had very low safety significance because the public exposure associated with the item was less than 5 millirem and there were not more than 5 occurrences.
Inspection Report# : 2003009*(pdf)*

Physical Protection

Significance: N/A Aug 07, 2003
Identified By: NRC
Item Type: FIN Finding
Verification of Compliance With Interim Compensatory Measures Order

On February 25, 2002, the NRC imposed by Order, Interim Compensatory Measures to enhance physical security. The inspectors determined that, overall, the licensee appropriately incorporated the Interim Compensatory Measures into the site protective strategy and access authorization program; developed and implemented relevant procedures; ensured that the emergency plan could be implemented; and established and effectively coordinated interface agreements with offsite organizations.
Inspection Report# : 2003002*(pdf)*

Miscellaneous

Significance: N/A Nov 07, 2003
Identified By: NRC
Item Type: FIN Finding
Problem Identification and Resolution Program Assessment
The team concluded that the licensee was effective at identifying problems and putting them into the corrective action program. The licensee's effectiveness at problem identification was evidenced by the relatively few deficiencies identified by external organizations (including the NRC) that had not been previously identified by the licensee, during the review period. However, the team identified a repetitive failure on the part of the licensee to properly identify the inability of secondary containment doors to close and potential failures of secondary containment. The licensee effectively used risk in prioritizing the extent to which individual problems would be evaluated and in establishing schedules for implementing corrective actions. Corrective actions, when specified, were generally implemented in a timely manner. Licensee audits and assessments were found to be effective. On the basis of interviews conducted during this inspection, workers at the site felt free to input safety findings into the problem identification and resolution program.
Inspection Report# : 2003007*(pdf)*

Last modified : March 02, 2004